

NFC CLOUD: BY THE GOVERNMENT, FOR THE GOVERNMENT

INTRODUCTION

The National Finance Center (NFC) is a designated Shared Services Center under the Federal Information Technology Shared Services and OPM's Human Resources Line of Business initiatives. These initiatives require Federal agencies to use a shared approach to service delivery. To achieve this goal, NFC has defined an *IT Value Transformation Road Map* for building and implementing a secure multi-tenant community cloud for Federal agencies based on a cloud computing approach. A fee-for-service organization, NFC offers systems and services to over 170 Federal agencies, including the U.S. Department of Agriculture, the Department of Homeland Security, the Library of Congress, Department of Justice and others. NFC is an organization focused on providing reliable, cost-effective, employee-centric systems and cloud hosting services to its Federal customers.

Every year, the Government seeks IT products and services to serve the needs and demands of the American people. These products and services require a significant IT infrastructure that includes applications, computing power, and hosting services. NFC (www.nfc.usda.gov) in New Orleans, LA, meets Government's demands through cloud storage, virtual machines, Web hosting, and application services. NFC's cloud computing model is designed to share a large pool of computing resources by dividing networks, storage, compute, and services into isolated walls to service each of their customers. NFC's overall architecture is flexible, FISMA compliant, multi-tenant, and offers a large range of cutting-edge services.

NFC currently provides payroll/personnel services to more than 650,000 Federal employees and hosting services for numerous mission critical systems. The payroll service maintains current personnel records, and creates both system-generated and ad hoc reports. NFC's hosting services provide a secure multi-tenant community cloud that not only increases efficiency and agility, but also offers high availability without additional cost.

"We see our value in reducing our customer agencies' costs by providing applications and infrastructure that systematize their backend processing."
*John White – Director,
USDA National Finance
Center (NFC)*

NFC CLOUD ADVANTAGE

As a designated Shared Services Center, NFC's goal is to provide low-cost, best-of-breed, innovative solutions. NFC offers a comprehensive set of enterprise-grade data center hosting services designed to accommodate rapid deployment and implementation of small to very large IT operations.

Utilizing its Shared Service model, NFC has been able to reduce storage pricing to its customers by 72% in a 24-month period. Hosting customers leverage the NFC Data Center Services framework in its entirety, and may selectively implement one or more of the non-core services based on their individual business needs, and operational and financial imperatives. Within each of the non-core services, customers can choose a fully-configured service architecture from the outset, or start with a basic configuration and adapt and expand as necessary. NFC data centers are engineered to provide complete redundancy to ensure superior uptime.

NFC offers the following Data Center Hosting Cloud Services (core and non-core):

Data Center Hosting Services	
Core Services	<ul style="list-style-type: none"> • Platform as a Service (PaaS) • Engineering Support • Storage Services • Network Services • Security Services • Disaster Recovery Services • Customer Support • Asset and Configuration Management • Change Management • Site Preparation • Hardware and System Software Provisioning • Hardware and System Software Maintenance and Licensing
Non-Core (optional) Services	<ul style="list-style-type: none"> • Database Administration • Application Database Backup and Restore • Application Vulnerability Management • Application Access Management • Application Certification and Accreditation Support • Production Management Services

THE RIGHT TECHNOLOGY

Customers can choose a cloud service model based on their specific business, operational, and technical requirements. The cloud **service models** offered by NFC can be grouped into two categories:

- **Software as a Service (SaaS).** Software deployed as a hosted service and accessed over the Internet.
- **Platform as a Service (PaaS).** Platforms that can be used to develop and deploy applications.

Cloud computing has a number of different deployment models for delivering services. NFC offers the following cloud **deployment models** to Government agencies:

- **Government Private Cloud.** The cloud infrastructure is operated solely for a single organization. It may be managed by the organization or third party and may exist on-premises or off-premises.
- **Government Community Cloud.** The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns (e.g., mission, security requirements, policy, or compliance considerations). It may be managed by the organizations or third party, and may exist on premises or off premises.

NFC offers both private and community cloud solutions based on industry-leading storage and data management technology. NFC's hardware and software infrastructure handles any workload, providing a future-ready design for evolving to a private cloud. NFC provides leading technology advantages for delivering private cloud-based services, including:

- Broad-Based Network Access
- Measured Services
- Resource Pooling – Location Independence
- Rapid Elasticity

- The Right People and Processes

BROAD-BASED NETWORK ACCESS

The SaaS and PaaS offerings are accessed by clientele via a secure Web front end through a .NET and visual studio graphical user interface (GUI). Customers need only to have an internet connection and Web browser. Access is role-based and user permissions are established during the initial set up. User additions are made through a formal request, and follow a defined and efficient provisioning process.

MEASURED SERVICES

All SaaS and PaaS offerings are billed based on usage. Customers gain the financial advantage of a pricing model that enables them to have secure application functionality, without the capital expenditure costs associated with the application (Hardware, Software, Maintenance, and Labor). Customers are billed on a monthly basis.

RESOURCE POOLING – LOCATION INDEPENDENCE

The size of the cloud resource pool and the flexibility with which resources can be allocated to applications on demand determines how efficient a given cloud implementation can be, and thus the savings cloud computing can offer. Through the use of dynamic license pooling, NFC users, as well as organizational instances, can be added to the cloud and the overall cloud infrastructure scales to support demand – be it network, storage, or compute.

RAPID ELASTICITY

Through the use of the NFC's secure cloud infrastructure, customers are able to expand and scale their technology consumption. The NFC Cloud infrastructure can support applications potentially accessed by any number of users at any point, from any place, and with greater speed than conventional, on-premises infrastructure.

"We offer technology updates and capacity on demand to our customers." -- Gil Hawk – Chief Information Officer

THE RIGHT PEOPLE AND PROCESSES

Making the transition to cloud computing requires more than technology; it requires an IT paradigm shift that includes significant changes to IT processes and the roles and responsibilities of IT staff. NFC understands this shift and helps agencies make the transition with as little risk and disruption to their ongoing operations as possible. NFC's Data Center System Engineering Staff can assist with requirements definition, solution architecture planning, installation, testing, setup, deployment, and—once the solution is deployed—knowledge transfer. In addition, NFC will partner with agencies to help them take the first steps to evolve their IT infrastructure to a private cloud. This partnership will result in an end-to-end evaluation of data center environments from an organizational, technological, capacity, and operational viewpoint. During these partnering sessions, NFC's experienced and knowledgeable staff will:

- Identify application and infrastructure targets for the cloud based on capacity, performance, and service-level needs.
- Assess impacts in terms of cost savings, efficiency gains, and performance improvements.
- Identify process improvements in terms of impact on cost and efficiency, agility and timeliness, and progress toward an IT-as-a-service delivery model.

NFC CLOUD OFFERINGS- SaaS

NFC has extensive cloud offerings in the areas of:

- Payroll Services Applications
- Human Resources Services Applications
- Insurance Services Applications
- Time and Attendance Applications

- Performance and Talent Management Applications
- Case Management Applications

The services listed below cover both the SaaS and PaaS areas. These services are consumption based for both Core and Non-Core services. NFC invoices on a monthly basis.

All SaaS and PaaS capabilities are customer accessible through an accredited secure Web interface. Core and Non-Core services are built upon and utilize multiple database platforms. Customers have access to these PaaS while consuming the selected SaaS. Both service sets are scalable to the customer's needs, and NFC has an extensive roadmap of future services and capabilities. Full descriptions and a complete list of the NFC's Service Catalog are available at www.nfc.usda.gov. Below is a high level of the SaaS and PaaS cloud services currently offered by NFC:

PAYROLL SERVICES APPLICATIONS

NFC provides the payroll services to more than 650,000 Federal employees each pay period; and processes over 720,000 W2s for Federal and former Federal employees using the following applications:

"Our strength is Software as a Service. We configure applications based on customer requirements." - Randy Speed – Director, Government Employees Service Division (GESD)

Payroll Services Applications	
Core Services	<ul style="list-style-type: none"> • Benefits Administration • Compensation Management <ul style="list-style-type: none"> ○ Back Office Payroll Processing ○ Customer Time and Attendance Interface ○ International Organization Appointments • PAR (Personnel Action Request) Processing • Back Office HR Processing
Non-Core Services	<ul style="list-style-type: none"> • Customized E-Gov Messages • Central Accounting Database Inquiry • Central Accounting Extract System • Central Accounting Interface System • Control System (Database PaaS) • General Ledger Interactive Description System • Management Account Structure Codes System • Miscellaneous Payments System • Standard Chart of Accounts (Adjustments, Process, Reconciliation) • Training Information System

HUMAN RESOURCE SERVICES APPLICATIONS

In addition to the many payroll services applications, NFC also provides the following Human Resources Services Applications:

Human Resource Services Applications	
Core Services	<ul style="list-style-type: none">• EMPOWR HR (PeopleSoft 9.0 Government Edition)<ul style="list-style-type: none">○ Benefits Administration○ Compensation Management○ PAR Processing○ Manager Self Service
Non-Core Services	<ul style="list-style-type: none">• Performance Management<ul style="list-style-type: none">○ ePerformance○ Enterprise Reporting• Staff Acquisition<ul style="list-style-type: none">○ Candidate Gateway○ Fill a Position○ Talent Acquisition Manager

INSURANCE SERVICES APPLICATIONS

NFC provides the following Insurance Services Applications:

Insurance Services Applications	
Core Services	<ul style="list-style-type: none">• Benefits Administration<ul style="list-style-type: none">○ Centralized Enrollment Clearinghouse System○ Direct Premium Remittance System○ Federal Employees Health Benefits○ Pre-Existing Condition Insurance Plan○ Tribal Insurance Program

ADDITIONAL OFFERINGS / SERVICES

NFC provides the following Additional Services:

Additional Offerings/Services	
Non-Core Services	<ul style="list-style-type: none">• Migration Support• Help Desk Support• Training Support

NFC CLOUD INFRASTRUCTURE- PaaS

A key advantage of the NFC's infrastructure is security. NFC's first line of defense is the USDA unified telecom network (UTN). The primary cloud defense begins with the DMZ. This layer defends the cloud enterprise from unauthorized access and acts as a monitor of those who are authorized and are coming in from an unrecognized network. This layer consists of DNS services, Web tiers, email, proxies, FTP servers, VPN devices; keeping unauthorized users out, and channeling authorized users to their appropriate environments. However, NFC is prepared to meet the individual security needs of its Federal customers.

NFC brings years of experience in shared computing to the Federal marketplace through their evolving infrastructure and support of dozens of Federal agencies. NFC bridges the gap to cloud-based offerings through strong multi-tenancy tools and extensive use of VLANs to isolate network traffic between

different zones in the cloud. This is critical to NFC as a cloud service provider, but also a requirement in internal clouds, to make sure that authorized users have access to applications, compute, storage, and networking specific to them.

“We want our customers, both current and future, to know that NFC specializes in providing unique Federal requirements through both SaaS and/or PaaS as a private cloud serving the Federal Agency Customer.” - John White – Director, USDA National

Finance Center (NFC)

NFC has successfully delivered an elastic cloud framework while achieving NIST and FISMA security accreditations to support a shared platform at a very competitive price. These accreditations provide NFC a license to operate as a Federal cloud service provider.

NFC cloud computing offerings bring unlimited provisioning of computing capabilities and services to its users. Their offerings are automated with extensive capabilities in compute, storage, and networking of shared services. NFC’s offerings were designed to have broad capabilities promoting the use of different platforms bringing the consumer access to ubiquitous computing. NFC is flexible as it changes with the prevailing consumers’ physical and virtual resource needs. It’s system is capable of providing the desired infrastructure allowing the customer to manage the obtained resources in the best way desired.

The infrastructure:

- Is designed with varying specifications to enhance privacy of government agencies because the resources are owned, managed, and operated by NFC.
- Acts as a service as it works for the organization to the intended purpose.
- Is capable of offering resource services at specific requirements, missions, security needs, and compliance considerations. Therefore, NFC’s Cloud offering is tailored to satisfy the needs of the Federal government community by the development of their cloud computing infrastructure.

CONCLUSION

The USDA’s NFC in New Orleans, LA, has implemented shared services to streamline the provision of hosting, payroll, human resources, and other services for more than 650,000 Government employees in over 170 Federal agencies, including the U.S. Department of Agriculture, the Department of Homeland Security, the Library of Congress, Treasury, Commerce, Department of Justice and others.

Organizations that are ready to move their hosting, payroll, human resources, or other services to the cloud have the opportunity to obtain great benefits from a simpler, less expensive, and more powerful process by selecting NFC.